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Application No: 10/733,089
Responsive to the Office Action of May 9, 2007

REMARKS

Applicant thanks the Examiner for his thoughtful review of the present application. This application is under final rejection. Applicant has presented amendments that Applicant believes should render the claims allowable. In the event, however, that the Examiner is not persuaded by Applicant's amendments, Applicant respectfully requests that the Examiner enter the amendments to clarify issues upon appeal. The status of the claims is as follows:

- a. Claims 1-10 and 13 are Pending in the present application.
- b. Claims 10, 11 and 14-29 have been previously withdrawn.
- c. Claims 1-10 and 13 are rejected.
- d. Claim 1 has been amended for clarification to recite "wherein the sense line is utilized to thermally assist in switching a magnetic orientation of *the* at least one of the plurality of magnetic memory elements".

i. PRESENT AMENDMENT

Independent Claim 1 was amended to distinctly point out and particularly claim the subject matter the Applicant regards as his invention. Specifically, the claim has been amended to recite "wherein the sense line is utilized to thermally assist in switching a magnetic orientation of *the* at least one of the plurality of magnetic memory elements". No new matter has been introduced with the amendment of this application.

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ii. **ARGUMENT**

a. **Rejections of Claims 1-10 and 13 under 35 U.S.C. §102(e) (673 Reference)**

We respectfully remind the Examiner that in order to anticipate a claim, US Application 2004/0125673 to Daughton et al. (hereinafter *Daughton*) must teach **every element of the claim** and "***the identical invention must be shown in as complete detail as contained in the ... claim.***" MPEP 2131 citing *Verdegaal Bros. V. Union Oil Co. of California*, 814 F.2d 628, 2 USPQ2d 1051 (Fed. Cir. 1987) and *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 9 USPQ2d 1913 (Fed. Cir. 1989) (emphasis added).

The Applicant respectfully traverses the rejection of Claims 1-10 and 13 because all of the elements of independent Claim 1 are not taught or suggested by *Daughton*, as emphasized by the recited claim elements set forth below.

1. A magnetic random access memory device comprising:
 - plurality of magnetic memory elements;
 - a sense line coupled to the plurality of magnetic memory elements for sensing a magnetic orientation of at least one of the plurality of magnetic memory elements wherein the sense line includes a first via and a second via; and
 - wherein the sense line is utilized to thermally assist in switching a magnetic orientation of the at least one of the plurality of magnetic memory elements.

Applicant respectfully disagrees with the Examiner's assessment. The present invention of claim 1 recites a magnetic random access memory device. Accordingly, a sense line is utilized to thermally assist in the switching of the magnetic orientation of magnetic memory elements within the MRAM device. By utilizing the sense line to thermally assist in the switching of the magnetic orientation of magnetic memory elements within the MRAM device, the write current needed to perform the write operations of the MRAM device is substantially reduced.

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The Examiner states that the *Daughton* reference anticipates the present invention. Applicant respectfully disagrees and asserts that the *Daughton* reference does not disclose "...wherein the sense line is utilized to thermally assist in switching a magnetic orientation of the at least one of the plurality of magnetic memory elements ..." as recited in claim 1 of the present invention. (Emphasis added.) *Daughton* discloses a ferromagnetic thin-film based digital memory having a bit structures therein a magnetic material film in which a magnetic property thereof is maintained below a critical temperature above which such magnetic property is not maintained, and may also have a plurality of word line structures each with heating sections located across from the magnetic material film in a corresponding one of the bit structures.

These bit structures are sufficiently thermally isolated to allow selected currents in the adjacent word lines or in the bit structure, or both, to selectively heat the bit structure to approach the critical temperature. Such bit structures may have three magnetic material layers each with its own critical temperature for maintaining versus not maintaining a magnetic property thereof.

The Applicant argued in the response filed February 20, 2007 that *Daughton et al.* does not teach "...wherein the sense line includes a first via and a second via ...". In the Examiner's view, "the claims as written also easily read on an arrangement (such as the one found in *Daughton et al.*) where current flows from the sense line to ground through a first via, heating a first SDT associated with said first via, while more current flows from the sense line to ground through a second via, heating a second SDT associated with said second via. The fact that the two vias are indistinguishable from each other in the claims means there is no prohibition on the reference distinguishing them in any way it chooses." Applicant respectfully disagrees with the Examiner's line of reasoning.

Again, Independent Claim 1 has been amended to recite "...wherein the sense line is utilized to thermally assist in switching a magnetic orientation of the at least one of the plurality of magnetic memory elements ...". (emphasis added) The Examiner asserts that no relationship is claimed between either of the vias and the plurality of magnetic memory elements or any single one of said plurality. However, based on the amendment of Independent Claim 1, a relationship between the first and second via and a single one of the plurality of magnetic memory elements is established. Consequently, based the amended Independent Claim 1, the Examiner's assertion that there is nothing in the claims to distinguish the first via from the second via is no longer applicable since the first and

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second via of the recited invention is associated with a single one of the plurality of magnetic memory elements.

Therefore, Applicant asserts that a sense line including a first and second via... wherein the sense line is utilized to thermally assist in switching a magnetic orientation of the at least one of the plurality of magnetic memory elements, as recited in independent **Claim 1** is clearly different from the implementation of a single conduction via as disclosed in the *Daughton et al.* reference. Consequently, *Daughton et al.* does not disclose "...a sense line including a first and second via... wherein the sense line is utilized to thermally assist in switching a magnetic orientation of the at least one of the plurality of magnetic memory elements..." as recited in independent **Claim 1** of the present invention. Since the *Daughton et al.* reference does not disclose "...a sense line including a first and second via... wherein the sense line is utilized to thermally assist in switching a magnetic orientation of the at least one of the plurality of magnetic memory elements..." as recited in **Claim 1** of the present invention, the *Daughton et al.* reference does not anticipate independent **Claim 1** of the recited invention. Therefore, independent **Claim 1** is allowable over the *Daughton et al.* reference and the rejection of independent **Claim 1** under 35 U.S.C. §102(e) ought to now be withdrawn.

Claims 2-10 and **13** depend from independent **Claim 1** and inherit all of its limitations. Therefore, **Claims 2-10** and **13** are also patentably distinct in view of the Examiner's reference and the rejections of **Claims 2-10** and **13** under 35 U.S.C. §102(e) ought to now be withdrawn.

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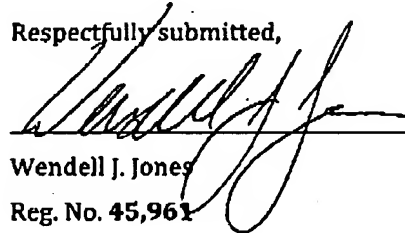
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iii. **CONCLUSION**

Applicant believes that this application is in condition for allowance. Accordingly, Applicant respectfully requests reconsideration, allowance and passage to issue of the claims as now presented. Should any unresolved issues remain, Examiner is invited to call Applicant's attorney at the telephone number indicated below.

Respectfully submitted,



Wendell J. Jones

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